NOAA Fisheries

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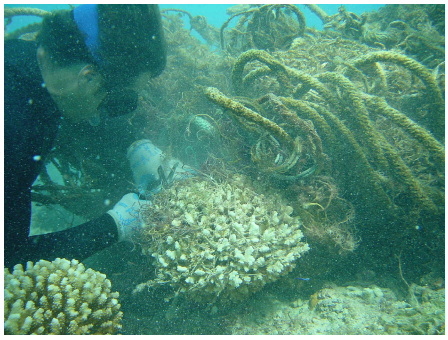
Coral Reef Conservation Program

Highlights of Selected Accomplishments for Fiscal Years 2001 and 2002

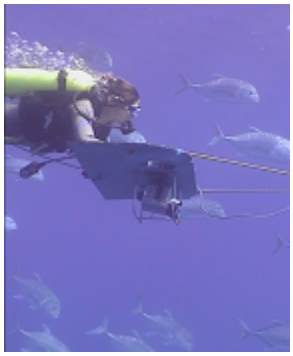
HAWAII AND THE PACIFIC

Marine Debris Clean-up: NOAA Fisheries (National Marine Fisheries Service - NMFS) leads a major interagency partnership to clean up existing concentrations of marine debris in the Northwestern Hawaiian Islands (NWHI). Debris, mostly derelict fishing nets from distant water fisheries, is the primary human threat to these pristine reefs. With funding from NMFS and the National Ocean Service (NOS), NOAA is collaborating with the State of Hawaii, U.S. Fish and Wildlife Service, US Coast Guard, U.S. Navy, the University of Hawaii, and other agencies and NGO partners. In FY-2001, charter vessels and the Townsend Cromwell collected nearly 70 tons of debris, primarily at Pearl and Hermes and Kure Atolls - more than had been collected in all previous years combined. Reefs at Kure Atoll were essentially cleared of all major debris. In FY-2001, NMFS also assisted in the first large scale reef cleanup in the main Hawaiian Islands, on the shoreline around Kauai. The work was done by the Tesoro Oil Company as compensation for an oil spill from their offshore moorings off the east coast of Kauai. In FY-2002, the debris removal efforts were expanded by beginning earlier in the year and it is expected that over 100 metric tons of derelict fishing gear will be removed from the NWHI. Additional effort are being directed to ways of identifying debris at sea and removing it before hits and damages reefs.



Diver cutting derelict fishing gear from coral

Assessment and Monitoring in the Northwestern Hawaiian Islands (NWHI): NOAA Fisheries is a key partner in understanding the unique resources of the NWHI. NMFS uses comprehensive, multidisciplinary research approaches to assess and monitor reef ecosystems, and map and characterize reef habitats. Ecological assessments are conducted for reef fishes, corals, other invertebrates, and marine algae in partnership with NOS, the State of Hawaii, U.S. Fish and Wildlife Service, the University of Hawaii, the Bishop Museum, and others. This work has resulted in the discovery of 2 to 8 new species of corals and nearly doubled the number of other invertebrate species reported from the NWHI - including many species new to science. Habitat mapping and characterization employs divers, towed cameras and acoustic technologies that provide ground-truthing for NOS-led satellite mapping of shallow reefs.



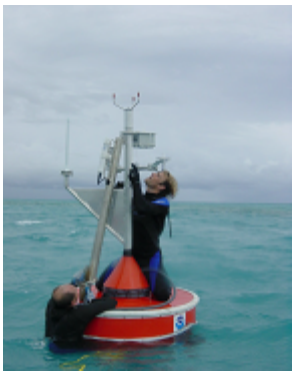
Tow board survey

Assessment and Monitoring of Reefs in American Samoa and Remote Pacific Islands: NOAA Fisheries has expanded its coral reef monitoring and assessment program to serve U.S. reefs throughout the Pacific. In January 2002, NMFS led a major cruise to American Samoa in January to share assessment and monitoring approaches and techniques with researchers and

Diver conducting reef survey

managers in American Samoa. This cruise also included the third coral reef assessment cruise to the remote Line and Phoenix Islands. This represents a significant new outreach effort to the U.S. territories and expanded the deployment of environmental monitoring stations in the Pacific. NMFS is currently planning a major coral reef assessment cruise to Guam and the Northern Mariana Islands in July 2003 utilizing the new NOAA Research Vessel Oscar Elton Sette. Together, these assessments will provide a coordinated monitoring and assessment approach linking all of the U.S. Pacific.

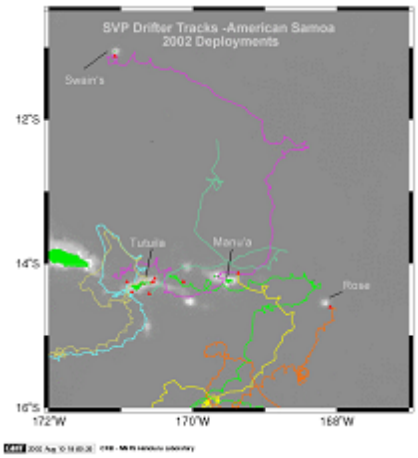
Remote Coral Reef Environmental Monitoring: Beginning in FY-2001, NOAA Fisheries supplemented our diver-based monitoring and ship-based oceanographic measurements with the deployment of a system of moored autonomous environmental monitoring stations. These stations provide data such as sea surface temperature, salinity, UV-B, air temperature, and barometric pressure. These satellite-linked stations are producing near-real time information that provide both a better understanding of the oceanographic conditions affecting reefs ecosystem and a early warning system for potential threats to coral reefs' health, such as coral bleaching or other natural events. Stations have been deployed in the NWHI, Line and Phoenix Islands and American Samoa. These measurements are linked with the growing international network of coral reef monitoring stations that comprise NOAA's Coral Reef Early Warning System. NOAA uses these data to help confirm its satellite-observations, which in turn helps researchers to understand coral reef bleaching on a larger spatial scale and at remote locations.


Buoy installation

Evaluating the Effectiveness of Existing Coral Reef Marine Protected Areas: NMFS and NOS are supporting the Hawaii Department of Land and Natural Resources (DLNR) to conduct a science-based assessment to determine the effectiveness of ecosystem conservation for the existing marine protected area system in the Main Hawaiian Islands including both no-take and multiple use sites. In cooperation with University of Hawaii, USGS and The Hawaii Nature Conservancy, this project will partner with ongoing terrestrial gap analysis assessments, providing a unique opportunity to link conservation actions from "ridge to reef."

Oceanographic Processes Affecting Coral Reefs: Building on years of satellite and ship-based data, NOAA Fisheries is integrating this information into Ocean Atlases for the U.S. Pacific Island Regions. These atlases will provide a compendium of oceanographic data in electronic form that can be used to examine relationships between coral reefs resources and environmental changes. The Atlas for the Main and Northwestern Hawaiian Islands has been completed in 2002.

Larval Transport from Coral Reefs: NMFS has begun multi-disciplinary ecosystem studies of the dispersal of larvae from marine protected areas to determine the benefits that these areas may have for fishery species throughout the Hawaiian archipelago. Satellite-tracked drifter buoys with drogues are being deployed in the NWHI and American Samoa to observe flow patterns affecting the transport and distribution of larvae. These data and other oceanographic measurements will allow modeling of subsets of populations linked by larval recruitment, enabling scientists and managers to assess optimal location, size, and management strategies for reserves and other marine protected areas. These data are available for managers and researchers on the Coral Reef Ecosystem Investigation's website (http://crei.nmfs.hawaii.edu/).



SVP Drifter tracks in American Samoa